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ABSTRACT

The paper considers the difference between articulatory and phonological disorders. The deviant production of a phoneme may be articulatory or phonological in nature. The nature of the phonemic deviation must be determined before appropriate therapeutic intervention may be devised. Recorded responses of 53 children (ages 4 years, six months to six years, nine months) to three assessments showed that, while all the subjects had deviations in phoneme production, approximately 30% produced the phoneme /r/ incorrectly only in cluster contexts, suggesting the need for a phonological or language-based therapy. Attention is focused on Structured Role Play Therapy, a recent development in language intervention, which may be effective in the remediation of multiple phonemic production deviations. This approach is based on the work of J. Piaget and incorporates the programming of simulated real life situations within a play context in which correct productions of phonemes is practiced. (Author/CL)

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Phonological Deviation of /r/

Remediation Utilizing Structured Role Play Therapy

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Abstract

This paper considers the difference between articulatory and phonological disorders. The deviant production of a phoneme may be articulatory or phonological in nature. The nature of the phonemic deviation must be determined before appropriate therapeutic intervention may be devised. Structured Role Play Therapy, a recent development in language intervention, may be effective in the remediation of multiple phonemic production deviations.

Phonological Deviation of /r/
Remediation Utilizing Structured Role Play Therapy

Deviations in phonemic production may be classified as articulatory disorders or phonological deficits. The decision to view a deviation as articulatory or phonological in origin has implications for assessment and effective remediation of the deviation. The purposes of this study are to explore the differences between articulatory and phonological disorders which result in deviations of the /r/ phoneme and to suggest intervention strategies based upon the underlying disorder.

Articulation or Phonology

Articulation refers to the movements of the speech mechanism to modify the air stream while an articulatory error "refers to the defective production fo a specific phoneme" (Van Riper and Irwin, 1958, p. 1). By 1964, McDonald had published a text on articulation as a sensory motor disorder. Considering articulatory errors as deficits in sensory motor integration, McDonald (1964) devised an intergrated therapy approach based upon the assummed sensory motor origin of articulation errors.

As a result of McDonald's work, speech/language pathologists take into consideration the facilitative or non-facitilative qualities of phonetic context when training the articulatory movements to produce targeted phonemes. Consideration of phonemeic deviations as sensory motor defects leads to remediation strategies involving feedback and the motor movement coordination necessary for phonemic production within an utterance. Focus upon utterance length and contextual assimilation have evolved from the articulatory approach to phonemic deviation. Articulatory drill is a common therapeutic technique based upon the need for practice of the appropriate movements for adequate speech production.

In an attempt to generalize production across several phonemes, distinctive feature approaches have evolved (Chomsky and Halle, 1968; Jakobson, et al., 1969). The distintive feature approach is based upon the concept that phonemes are composed of an array of distinctive features. Consequently, children who cannot produce a particular feature will incorrectly produce the several English phonemes which have that feature in their make-up. As a result, therapeutic procedures were devised to correct the defective feature with improvement apparent in the sounds containing that features (McReynolds and Bennet, 1972). Obviously, this approach to remediation of articulatory errors is more efficient than a traditional phoneme by phoneme approach. Production of a particular feature rather than a specific phoneme is remediated.

A more recent approach to understanding the origin of multiple errors in phoneme production comes from the area of phonological processes. Phonology, one aspect of language, concerns the sound system of a language (Nicolosi, et al., 1978). Language is based upon the use of rules to generate unique utterances. Phonology, an aspect of language, is also rule based.

When acquiring the phonological system of language, children evolve a series of rules which affect performance. Just as children simplify or alter grammatical structures to produce more semantically complex utterances (Carrow, 1973), children evolve a series of phonological process rules to allow for the production of phonemically complex utterances. Thus, very young children often employ a phonological process of final consonant deletion to simplify a closed syllable into an open syllable (e.g., with the deletion of the final consonant, "beet" becomes "bee"). Obviously, remediation procedures based upon a phonological process approach would have a basis in language rather than in articulatory targeting or sequencing.

Articulatory or Phonological Deviation of /r/

Children who produce "wabbit" for "rabbit" may be said to have the articulatory defect of substituting /w/ for the /r/ phoneme or may be said to use the phonological process of gliding the liquid /r/. The decision between articulatory or

phonological deviation has implications for the type of remediation strategy employed.

The speech production of children who have articulatory defects should be most effected by phonetic context of the target phoneme (McDonald, 1964). For instance, Burk (1948) found that 37% of children are able to produce the /r/ phoneme in clusters (e.g., br, cr, tr) before producing the singleton /r/ in such words as "rabbit" and "red." On the other hand, Brown (1970) suggested that children, when acquiring speech and language, regress to an earlier level of production of mastered forms when acquiring a new structure. If a speech sound deviation has a phonological basis, the /r/ phoneme should be produced in the simple singleton context before it is established in the more phonemically complex context of clusters. If the speech sound deviation has an articulatory basis, the /r/ phoneme should be produced in facilitative blends and clusters before it is generalized to the varied singleton contexts. One purpose of this study is to determine if children with /r/ deviations have articulatory or phonological disorders.

Fifty-three children between the ages of 4:6 and 6:9 responed to one of three assessment instruments: a traditional test of articulation, a phonological assessment procedure, or an experimental testing procedure to assess production of the /r/ phoneme. All subjects attended speech/language therapy for deviations in phoneme production. The Goldman-Fristoe Test of Articulation (Goldman and Fristoe, 1969) was used as a

traditional articulation test; The Assessment of Phonological Processes (Hodson, 1980) was used to determine the occurrence of the phonological process of gliding; an experimental testing form was devised to assess the production of /r/ in ten cluster contexts and in ten singleton contexts.

The data were tape recorded and the transcription of each child's speech was accomplished by two graduate students in speech/language pathology. Reliability of transcription was acceptably high with agreement over 95% on the transcribed target phonemes.

The data from each of the three procedures was analyzed to determine the children's productions of singleton /r/ phonemes and /r/ as a member of a cluster. A 25% difference between singleton and cluster production of /r/ was the criterion. Of the 53 children who participated in this study, 16 or 30% produced the /r/ at least 25% more often in singleton than in cluster contexts; 8 or 15% produced the /r/ more often in cluster than singleton contexts, and 29 or 55% of the children did not meet the 25% difference critierion. Table I presents the actual number of children in each of the response categories for each of the three testing procedures.

Table I: Number of children who produced /r/ correctly in singleton or cluster contexts

	Produced /r/ correctly more often in		
	singleton	cluster	did not meet criterion
Responses from			
Goldman-Fristoe	6	2	10
Phonological	4	3	11
Experimental	6	3	8

These data suggest that children with /r/ deviations are not homogeneous in their production strategies. Approximately 30% of the children produced /r/ correctly in singleton contexts while the /r/ phoneme in more phonemeically complex cluster contexts was in error. These children appear to be using the phonological process of gliding. They seem to have difficulty with more complex phonemic rules involved in cluster production. Consequently, a phonological or language based therapeutic intervention should be considered.

The 15% of children who produced the /r/ correctly in cluster contexts but not in singleton contexts may be more sensitive to phonetic context. Assimilation and facilitation of

target production from phonetic context may be useful as therapeutic procedures for this subgroup.

The majority of children who did not display a 25% difference between /r/ production in singleton and cluster contexts may combine both articulatory and phonological attributes in acquisition of the phoneme. An eclectic therapeutic approach may prove useful.

There are many intervention stratgies devised for articulation remediation (McDonald, 1964; McReynolds and Bennet 1972; Mowrer, 1977). In addition, strategies have been developed specifically for phonological process intervention (Cooper, 1968; Hodson and Paden, 1983). These phonologically based strategies employ the semantic aspect of language in an artificial drill situation but do not involve the child in pragmatically meaningful discourse. The remaining section of this paper will present a modification of role play therapy to be used in therapeutic intervention of phonological deviations. Structured Role Play Therapy allows for drill in pragmatically meaningful situations which bridge the gap between rote drill and spontaneous speech.

Structured Role Play Therapy

Traditional articulation therapy (Van Riper and Irwin, 1958) and even the more recent semantic contrast approaches (Weiner,

1981) are often reduced to drill work within the therapeutic setting. When devising such drill oriented therapy, the practiced targets are often pictures which are named by the child. After the child establishes production of the phoneme in varaious monosyllables and words, generalization of correct production of the phoneme in the word within a sentence is then mastered. Often carryover of correct phonemic production from elicited sentences into conversational speech is difficult for the child. In actual practice, carryover is frequently a neglected aspect of speech/language therapy.

Strucured Role Play Therapy has evolved from remediation techniques established for children with language disorders (Brooks, et al., 1983). Based on the work of Piaget (1965), active play is considered the child's natural medium of expression. When adults and children interact, learning is enhanced when both the child and the adult communicate and are mutually involved in a common activity (Bronfenbrenner, 1979). Several authors (Hubbel, 1981; Waryas and Stremel-Campbell, 1978) have suggested planning language remediation activities based on pragmatically realistic situations which have genuine interest for the child as well as relevance to events in daily life. One method for creating this realistic atmosphere is the programming of simulated real life situations within a play context.

Play has been used for remediation of language disorders (Hubbel, 1981). Role play, in which children participate in a dramatized situation, has sometimes been used as an aspect of

play therapy. Role play incorporates many positive features of human relationships by permitting the development of natural communication involving both the clinician and child. It also provides for the enactment of situations in which the clinician and child are mutually involved in activities relevant to the child's real life experience and in which the child has inherent interest. Role playing, a frequent component of spontaneous play, has natural appeal for children. Finally, role play allows authority roles to be varied as the child assumes a variety of conversational roles.

Previous uses of role play for language therapy have emphasized the clinical goals of stimulating increased quantity of spontaneous language output, facilitating the use of language in interpersonal communication, and allowing the client to experience different speaker roles (Hubbel, 1981). Generally, previous therapy has allowed the role play to evolve in an unstructured manner. Consequently, practice of particular linguistic structures or particular phonemes has not been a feature of earlier role play techniques.

Traditional role playing techniques have been modified in Structured Role Play Therapy. The desirable features of the interpersonal relationship are maintanined, but dialogue is brought under the direction of the clinician whose goals are to teach the child to produce specific linguistic forms. Structured Role Play Therapy was developed with specific emphasis on stimulus presentation, cueing for production of target structures

by the child, clinical feedback presentation to the child, and opportunity for practice.

In the remediation of phonemic deviation, Structured Role Play Therapy could be valuable in providing realistic settings in which correct production of /r/ and other phonemes is practiced. Structured Role Play Therapy allows the child to produce a phoneme in a target word within a sentence context immediately. Thus, the child learns to produce correctly a frequently used word containing the target phoneme (e.g., the /r/ in "ready") and the target word is used in a meaningful sentence for the actual role play (e.g., "I am ready"). The common word is then practiced within the role play. Since common words rather than less frequent nouns often used in traditional therapy (e.g. rabbit, ring) are targeted, the Structured Role Play Therapy allows for practice of words commonly used in daily living. Thus, the transition from therapy room to daily life is facilitated.

The Structured Role Play Therapy procedure involves the following steps:

1. The clinician devises a role play situation incorporating conversation with the child. The comon word containing the target phoneme is used repeatedly in this dialogue.

2. The clinician establishes correct production of the phoneme in the target word.

3. The clinician presents the situation, the dialogue, and

the roles to the child through story telling. Situations involve physical activity and props to heighten realism. As the child listens, the clinician tells the story with animation, using narration and taking the part of each character. The target structure is repeatedly modeled in the dialogue.

4. After telling the story, the clinician and the child dramatize the story together. The child's verbalizations consist of taking the dialogue role of his character which contain the specified target. (See the Appendix for an example of a Structured Role Play Therapy session.) The clinician provides narration, props, and activity to cue the child's verbalization of the target sentence. The child's production of the target is based on delayed imitation of the dialogue previously modeled by the therapist during storytelling. Paraphrase may also be used since th child is free to modify aspects of dialogue other than the target word. Opportunity for specified levels of practice is provided because the child's dialogue repeatedly incorporates the target structure.

Structured Role Play Therapy has been used successfully with children who displayed disorders of syntax and grammar (Brooks, et al., 1983). Structured Role Play Therapy has also been effective in improving correct production of several deviant phonemes in children with multiple phonemic deviations. Often, children with multiple phonemic deviations are using early phonological processes which should have been supressed or is using deviant phonological processes. In three clinical case

studies, Structured Role Play Therapy was effective in correcting the production of several deviant phonemes including the gliding of the /r/. For children who have a phonological process basis to their deviant phoneme productions, Structured Role Play Therapy promises to be an efficient, effective tool for remediation.

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Appendix

clinician: Mom and Tommy are getting ready to go out. They are getting dressed. Mom asks, "Are you dressed?" and Tommy answers . . .

client: Yes, I'm ready.

clinician: Mom then remembers that they haven't eaten lunch. She fixes lunch and they eat. She then asks, "Are you finished eating?" and Tommy answers . . .

client: Yes, I'm finished eating.

clinician: And . . .

client: And I'm ready to go.

clinician: "Okay, let's go." Mom and Tommy get in the car and drive to the zoo. "Are you ready to get out of the car, Tommy?" Tommy says . . .

client: I'm ready, let's go.

clinician: Mom and Tommy stop and watch the monkey. The monkey is funny and Tommy laughs and laughs. Mom asks, "Shall we go see the lion?" and Tommy answers . . .

client: Yes, I'm ready. I'm ready to see the lion.

clinician: They see the lion. It roars loudly. They see all the animals at the zoo. Tommy and Mom are getting tired. Mom says, "I'm tired. Are you ready to go home" and Tommy answers . . .

client: Yes, I'm ready.

clinician: They get in the car and drive home.

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